

CONTENTS

LEARN

L1: AI, Cities and Open Data Banks

L2: Machine Learning

L3: Satellite mapping and data processing

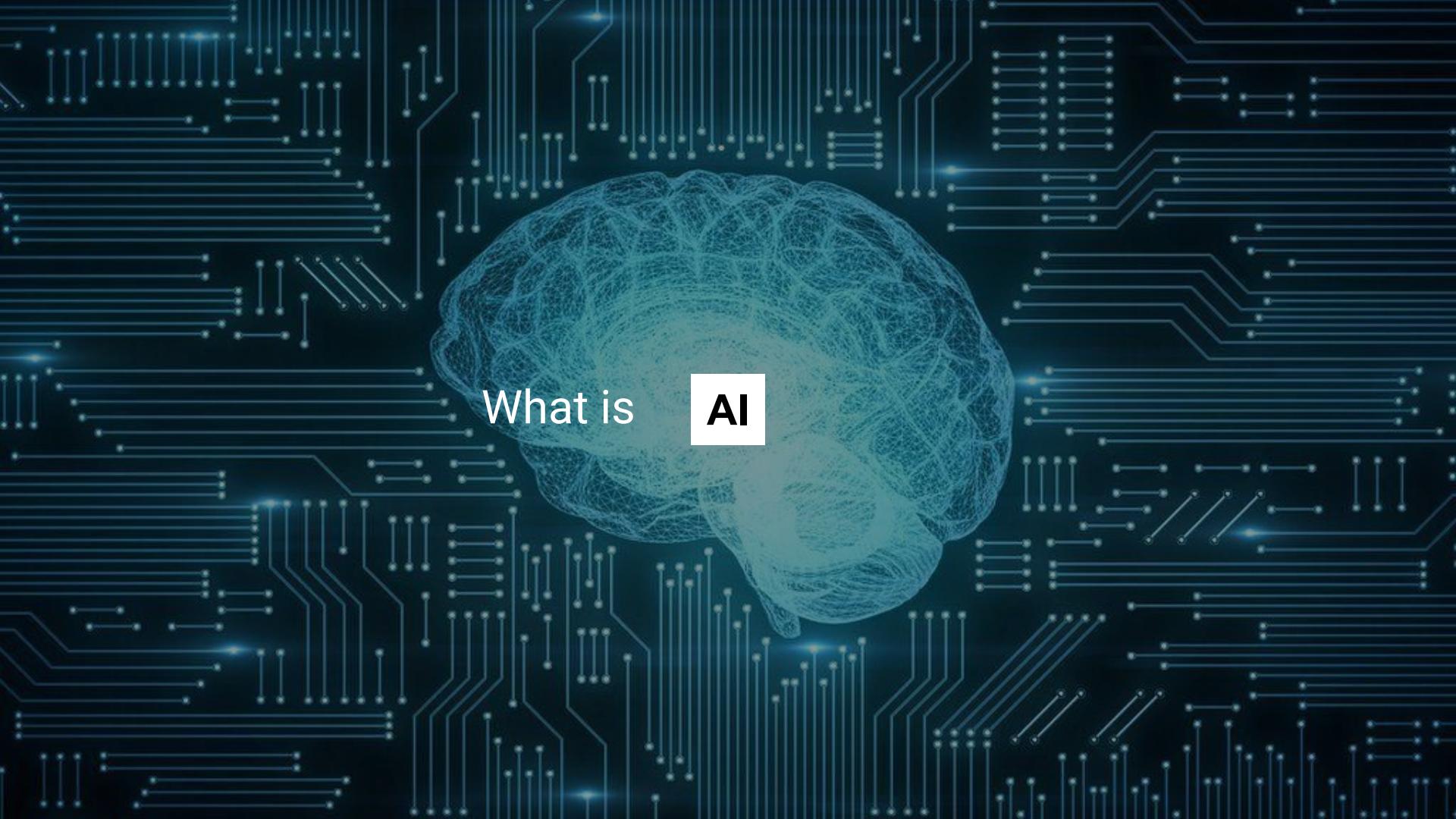
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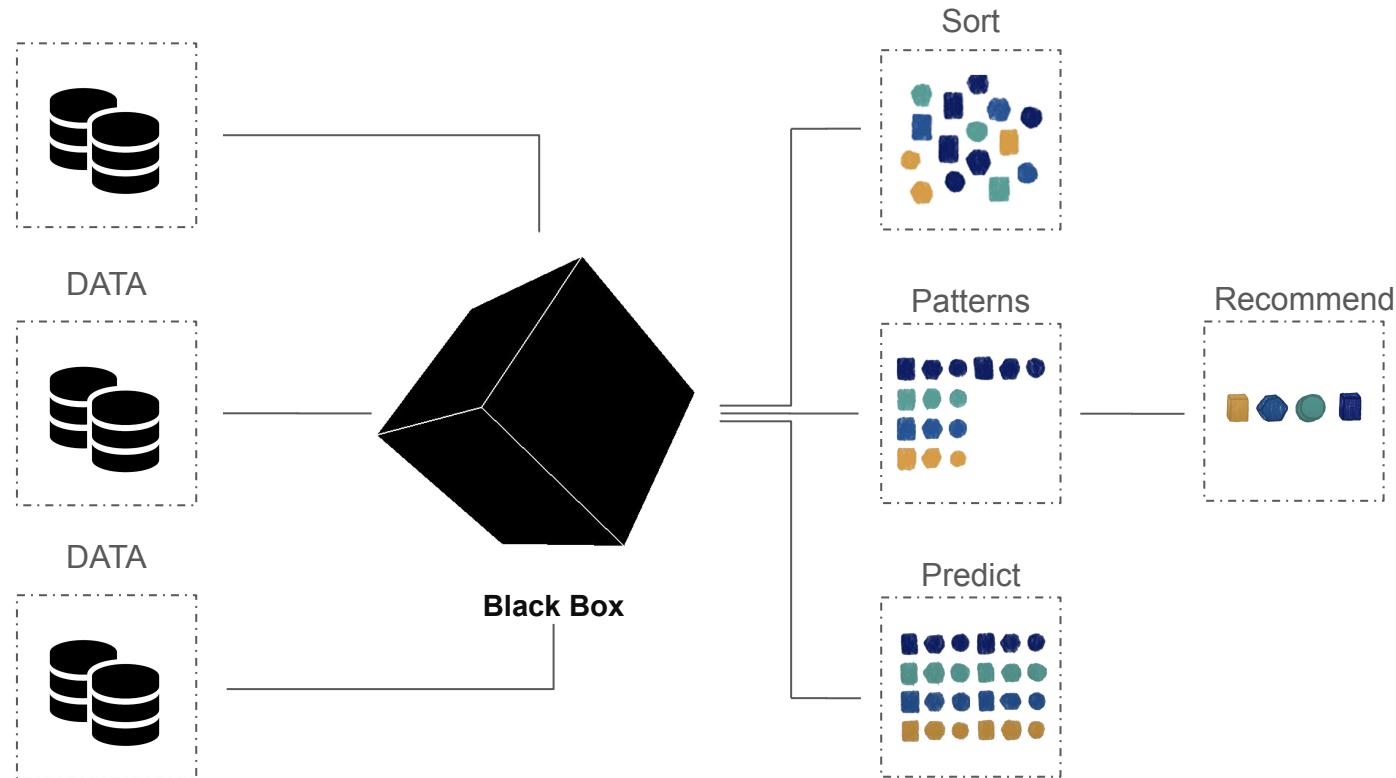
What is
AI

DEFINITION

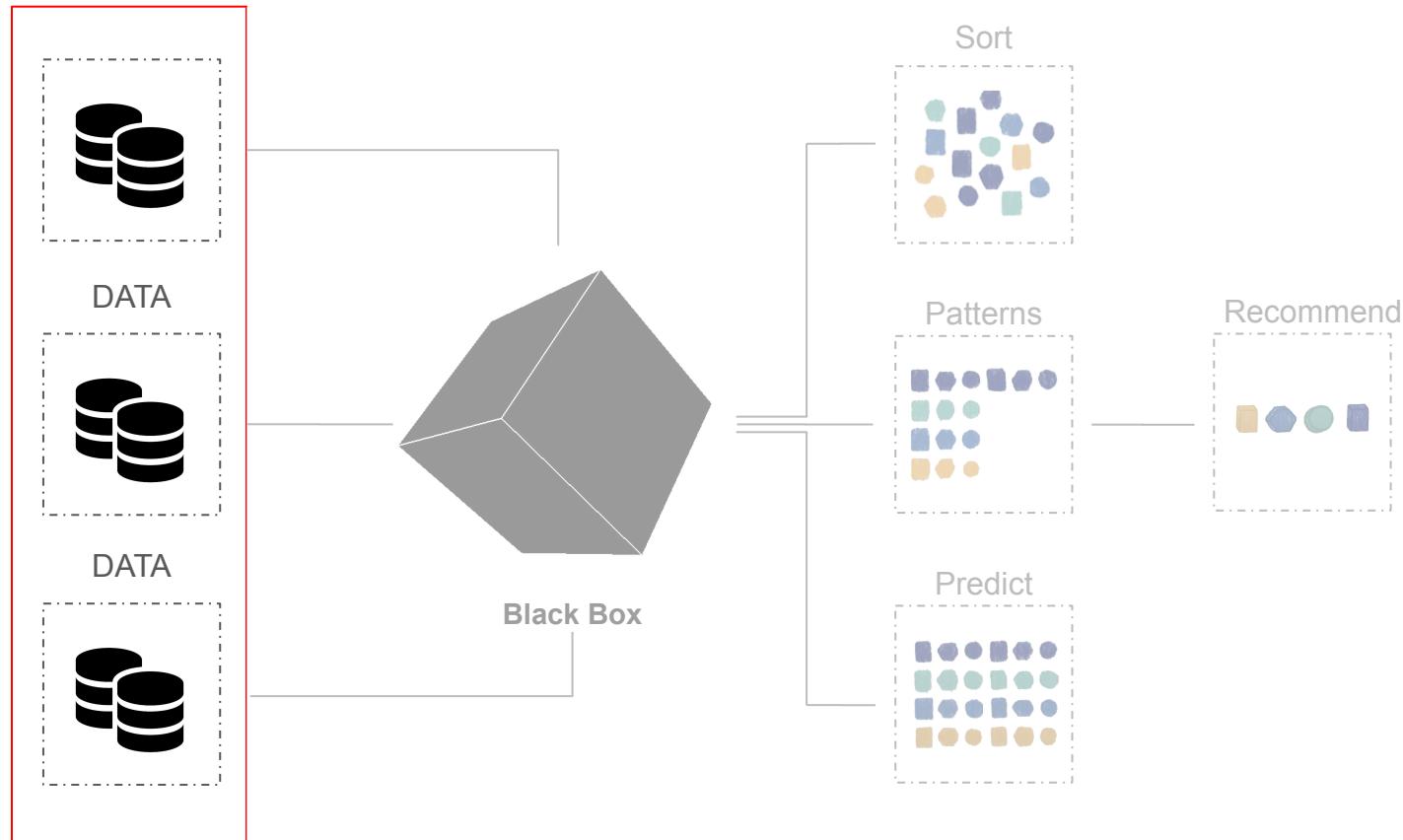
AI

“ An entity that empowers machines to **Learn, Think, and Reason** ”

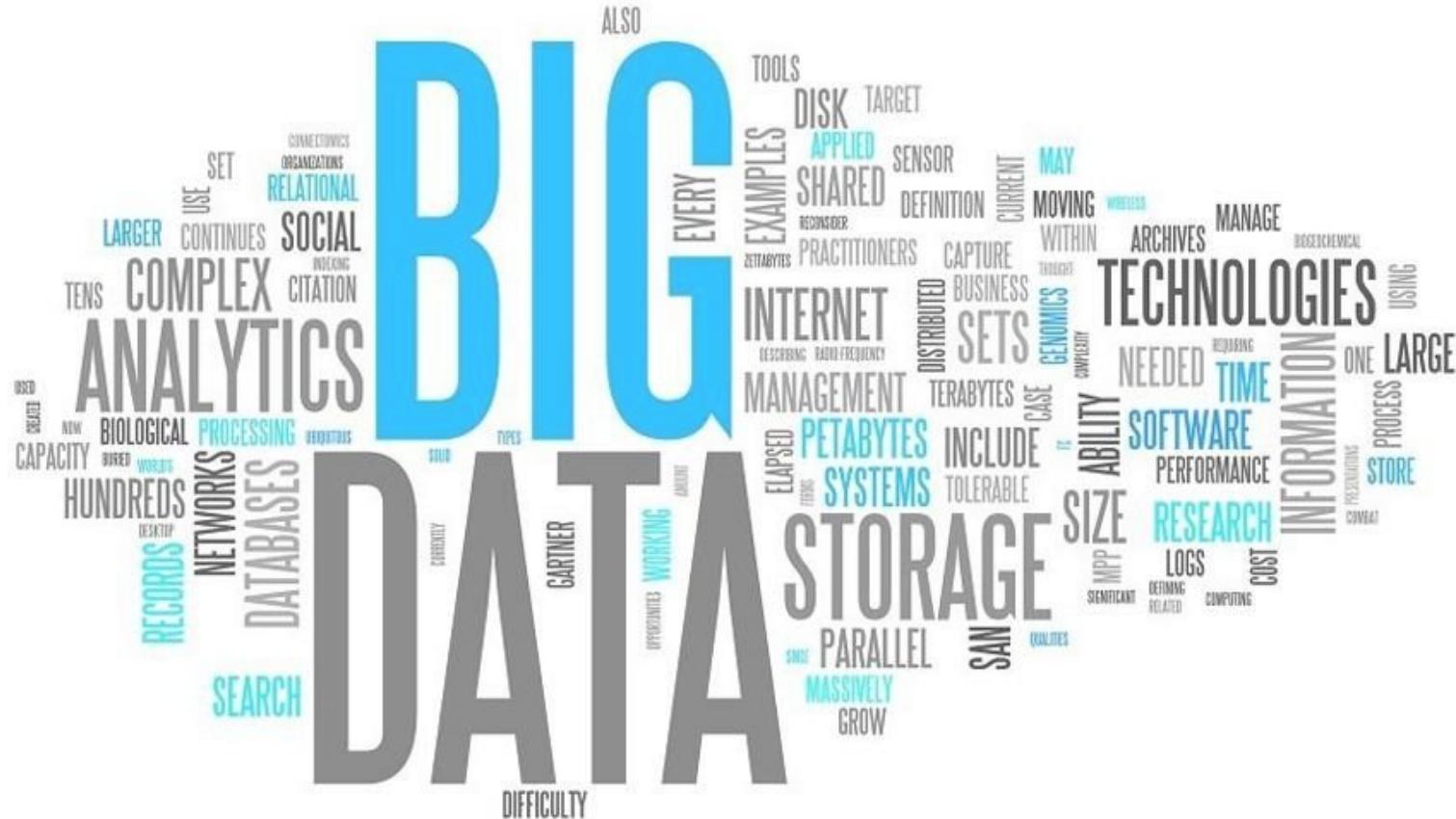
HOW DOES IT WORK



HOW DOES IT WORK

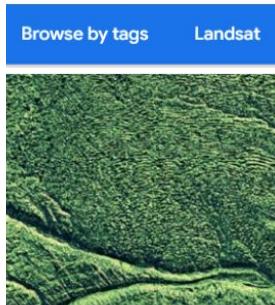


DATA



DATA SOURCES

Google Earth Engine



Data.Gov



Open Street Map



Google Maps



Amplifi



<https://earthengine.google.com/>

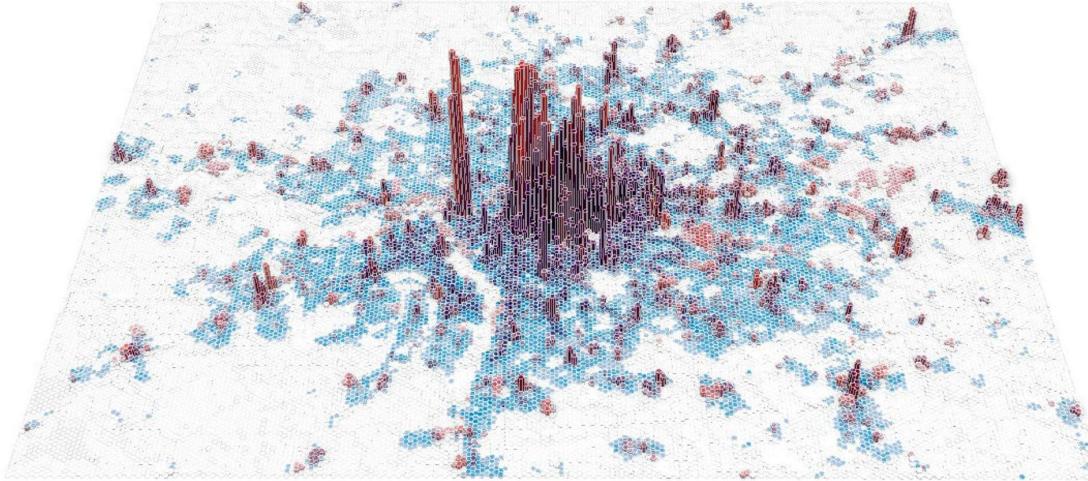
<https://data.gov.in/>

<https://www.openstreetmap.org/>

<https://www.google.com/maps>

<https://amplifi.mohua.gov.in/>

URBAN DATA ANALYTICS



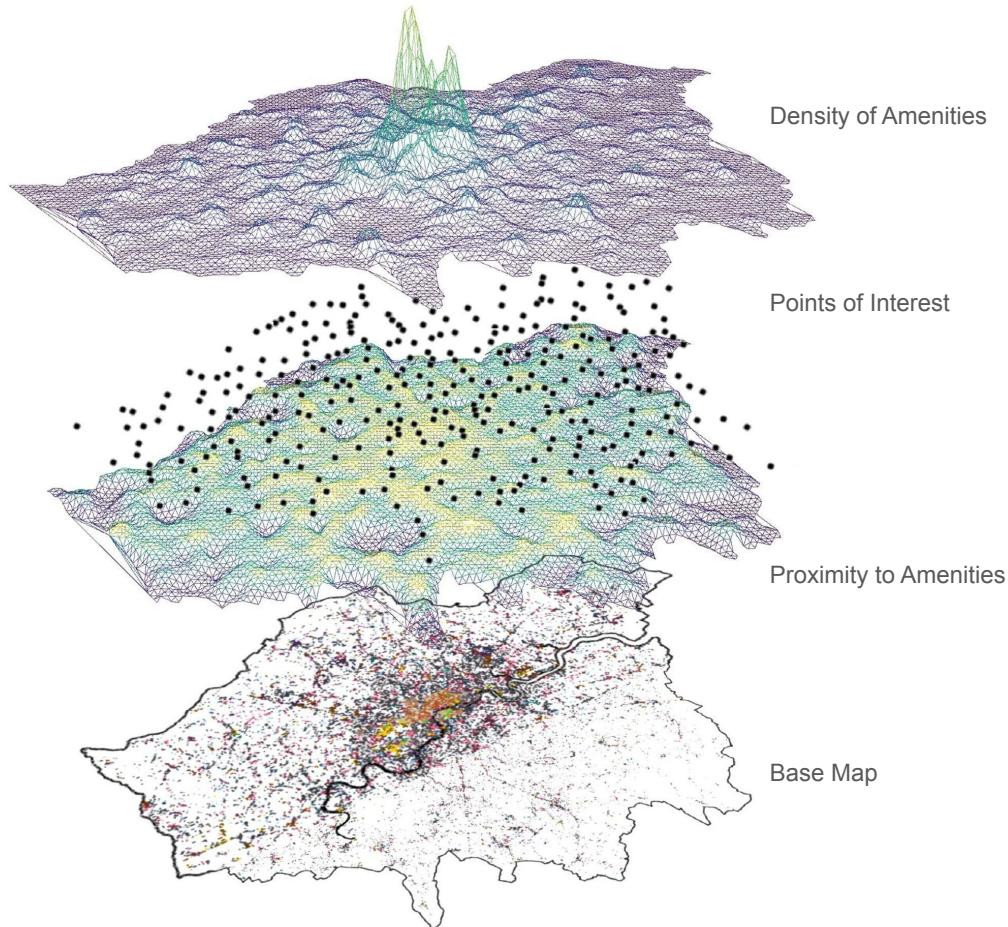
High Residents
High Employment

High Residents
Low Employment

Low Residents
High Employment



URBAN DATA ANALYTICS



THE SCIENCE OF URBAN FORM: DATA-DRIVEN SOLUTIONS TO REAL-WORLD PROBLEMS
The Urban Design Group at Foster + Partners

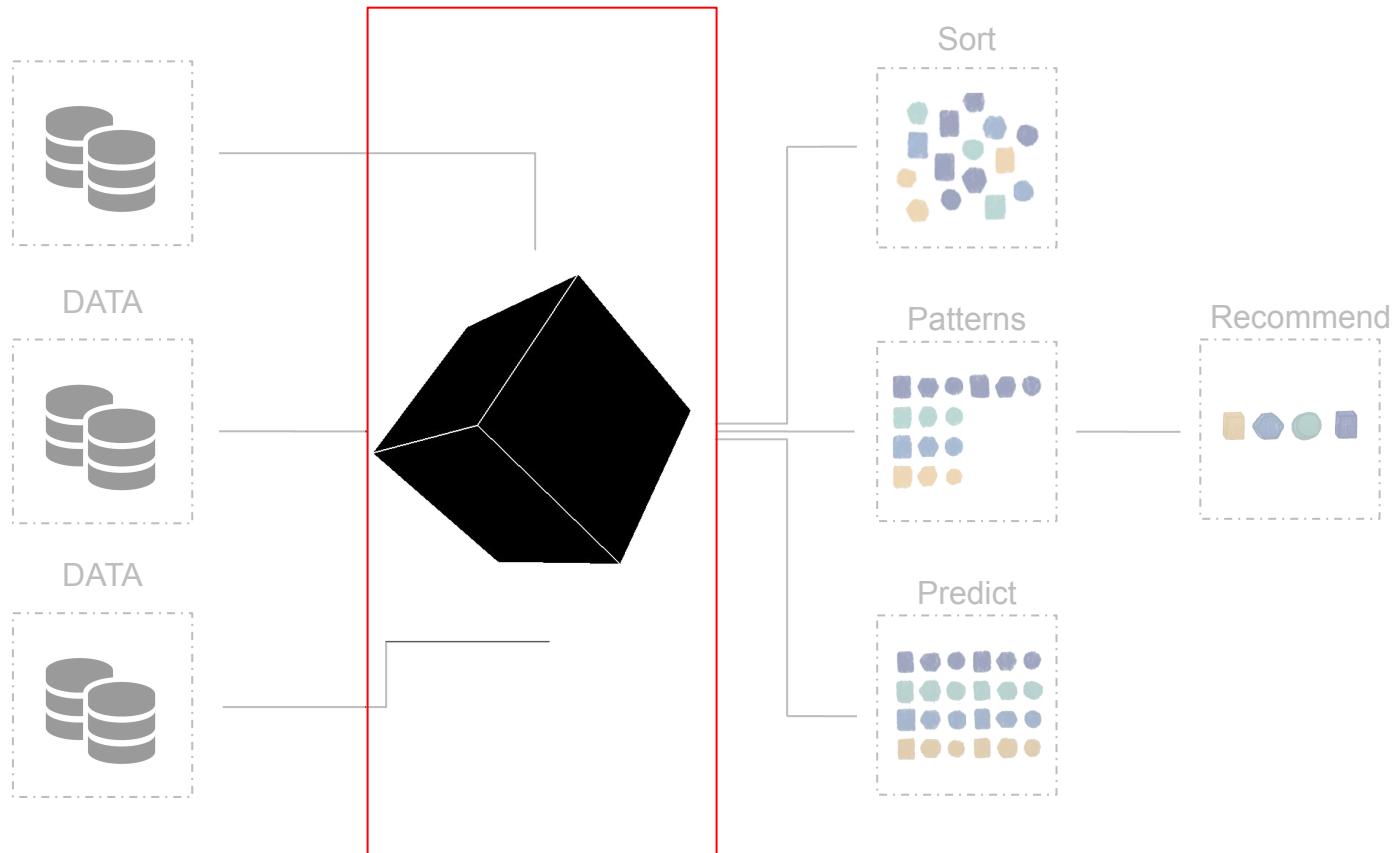
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AI



TYPES OF AI

Machine Learning

Uncovers structure and recognizes patterns in data to perform functions without being explicitly programmed.



Deep Learning

Performs classification tasks and recognizes patterns through an "artificial neural network".



Natural Language Processing (NLP)

Processes language to summarize, translate, or perform an action.



Expert System

Solves problems and simulates the judgment of an "expert"



Robotics

Enables machines to navigate and manipulate their environment.



Machine Vision

Visualizes surroundings and makes rapid decisions based on imagery



TYPES OF AI

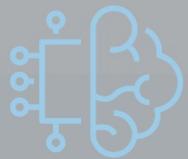
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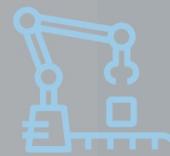
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Personalized recommendations & Siri, Alexa

Voice Assistance For Siri, Alexa

Chatbots Customer service

Personal Finance apps

Robotic vacuum cleaner

Facial Recognition

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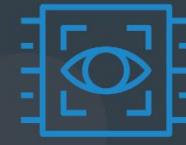
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Machine Vision

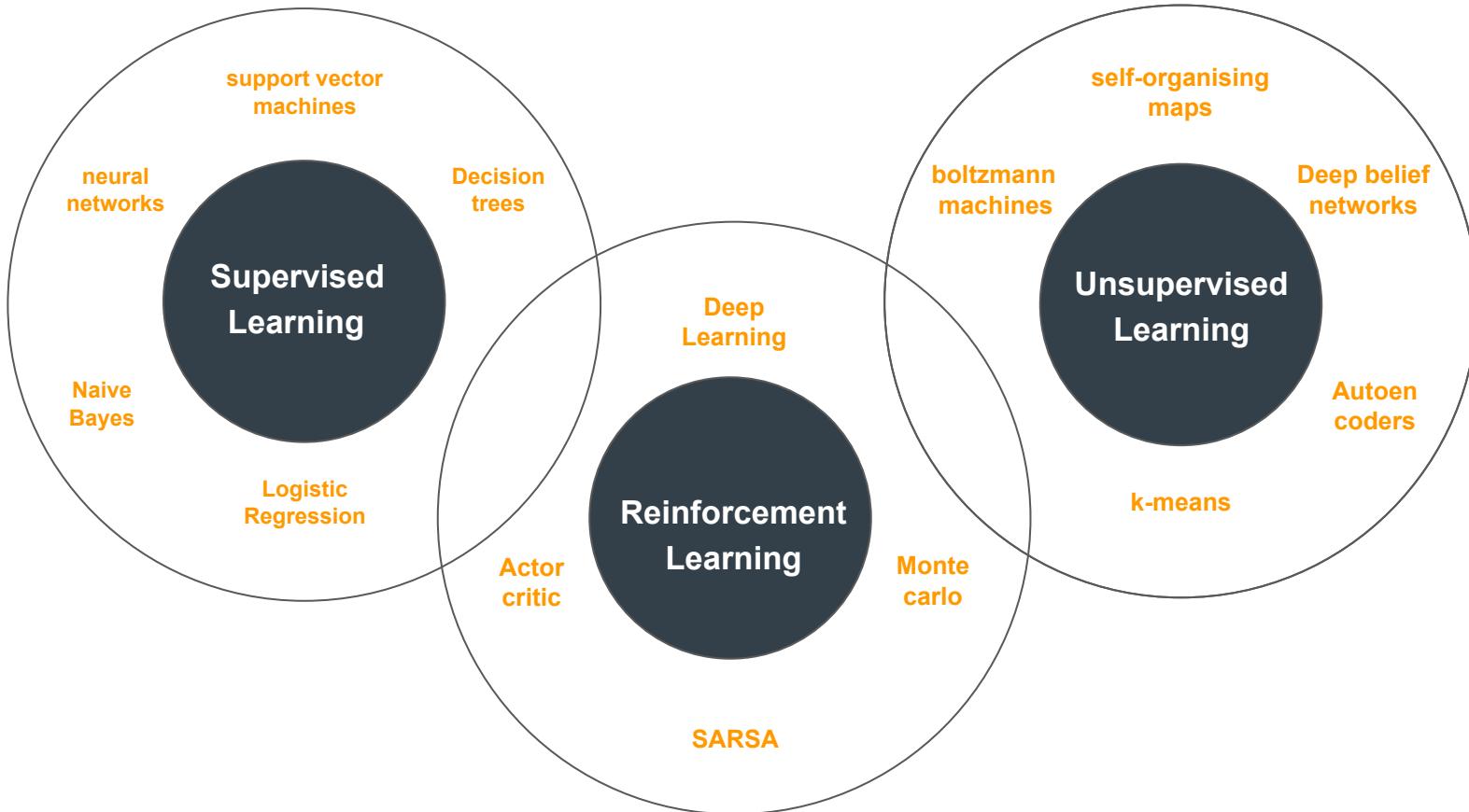
Visualizes surroundings and makes rapid decisions based on imagery



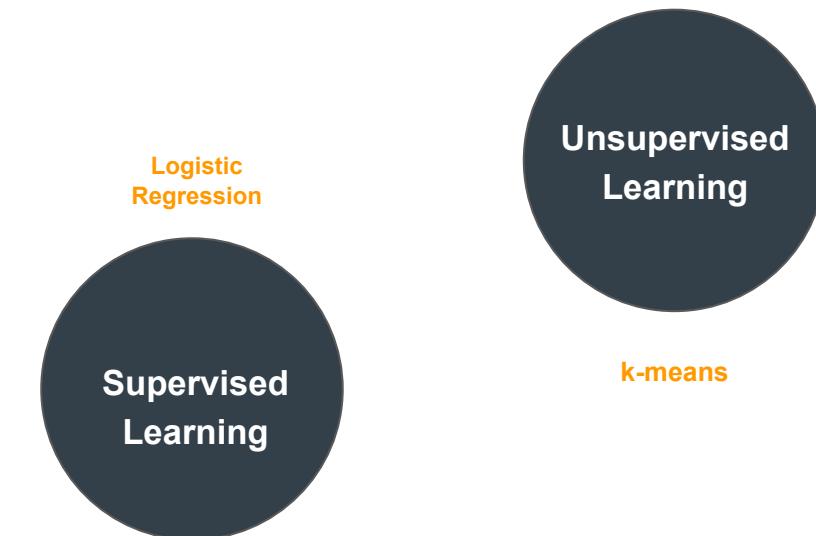
MACHINE LEARNING



MACHINE LEARNING



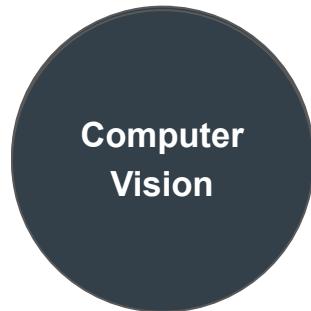
MACHINE LEARNING



COMPUTER VISION



COMPUTER VISION



Semantic
Segmentation

MACHINE LEARNING

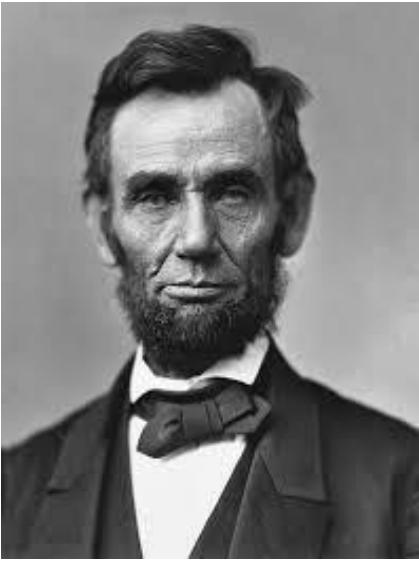


Logistic
Regression



K - means

COMPUTER VISION

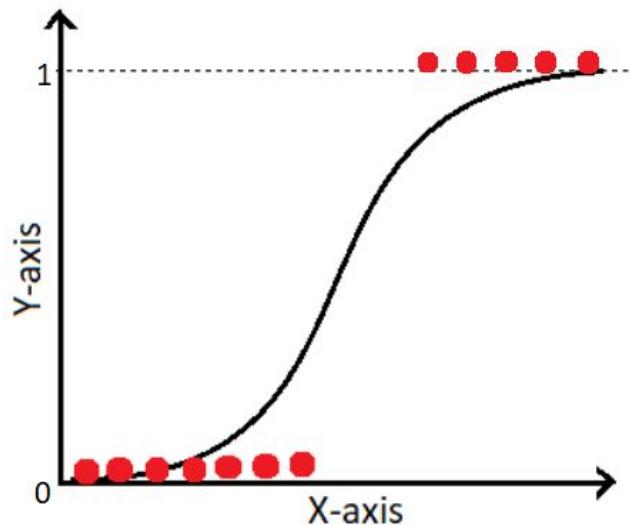


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180	180	50	14	34	6	10	33	48	106	159	181
206	109	5	124	131	111	120	204	166	15	56	180
194	68	137	251	237	239	239	228	227	87	71	201
172	105	207	233	233	214	220	239	228	98	74	206
188	88	179	209	185	215	211	158	139	75	20	169
189	97	165	84	10	168	134	11	31	62	22	148
199	168	191	193	158	227	178	143	182	105	96	190
205	174	155	252	236	231	149	178	228	43	95	234
190	216	116	149	236	187	86	150	79	38	218	241
190	224	147	108	227	210	127	102	36	101	255	224
190	214	173	66	103	143	95	50	2	109	249	215
187	196	235	75	1	81	47	0	6	217	255	211
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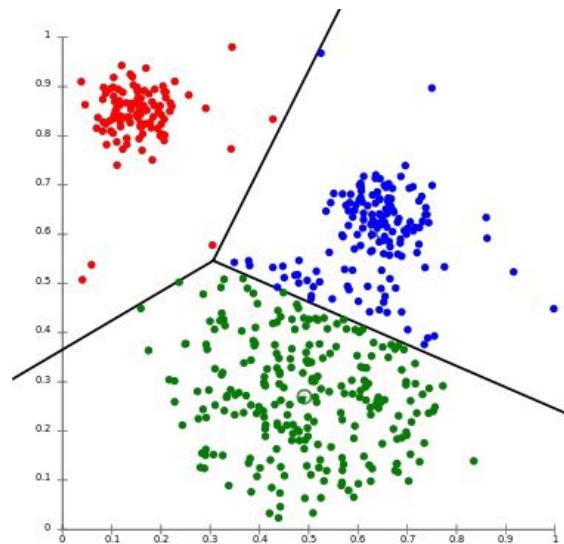
Semantic
Segmentation

MACHINE LEARNING



Logistic
Regression

MACHINE LEARNING



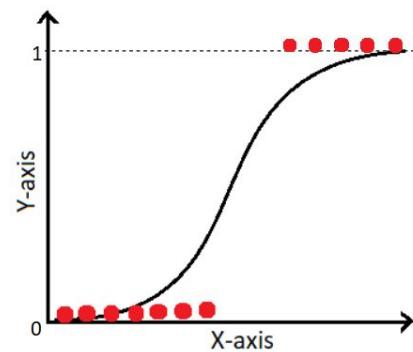
K - Means

COMPUTER VISION

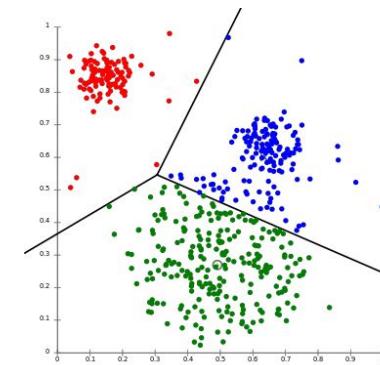
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174	155	252	236	231	149	178	228	43	95	234
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Semantic
Segmentation

MACHINE LEARNING



Logistic
Regression



K - means

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METHODOLOGY



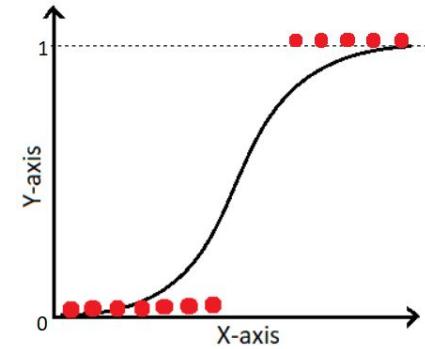
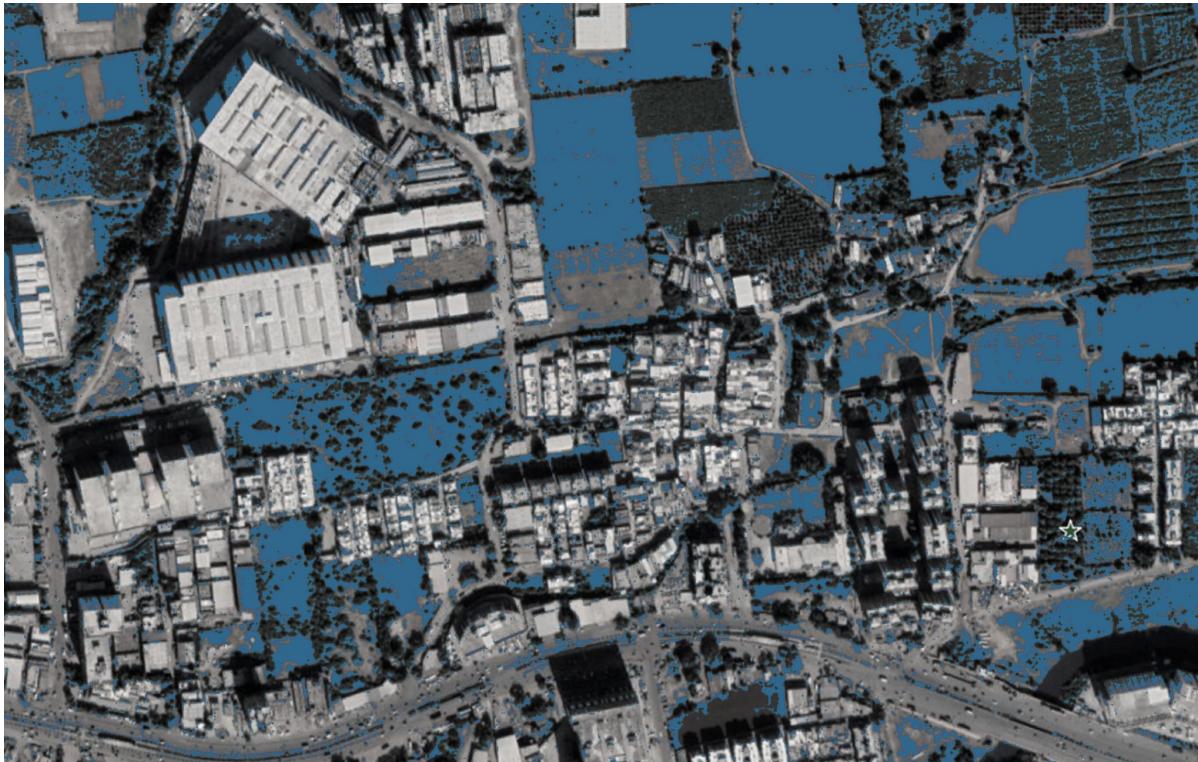
METHODOLOGY



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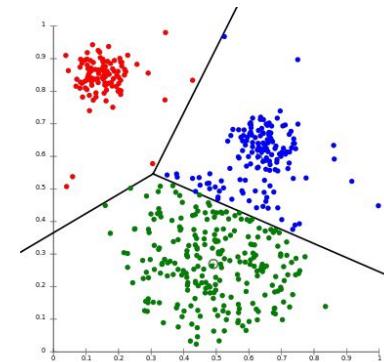
Semantic
Segmentation

METHODOLOGY



Logistic
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METHODOLOGY



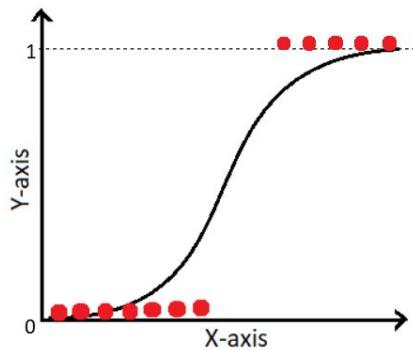
K - Means

Language Prompt Engineering - LangSAM

COMPUTER VISION

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MACHINE LEARNING



Pattern - Label

APPLY

Neighbourhood mapping

- Applications

APPLICATIONS

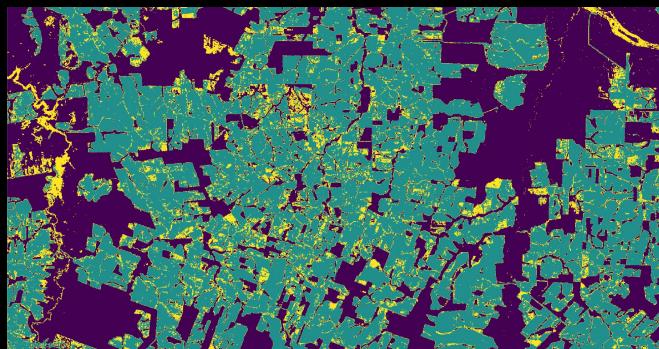
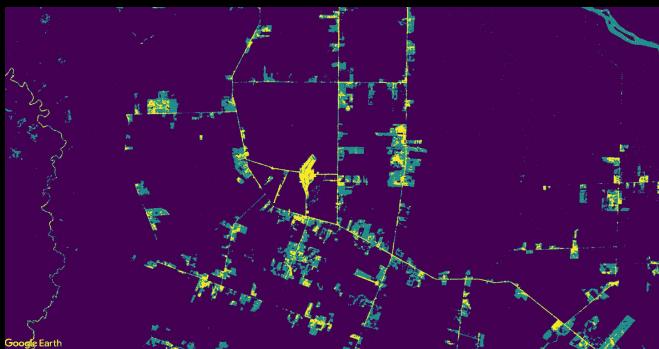


APPLICATIONS

1984



2023



Agricultural lands
+ 46,000 ha



Forests
- 62,000 ha



Urban areas
+ 16,000 ha



CONTENTS

SCALE

Transitioning Scales

APPLICATIONS

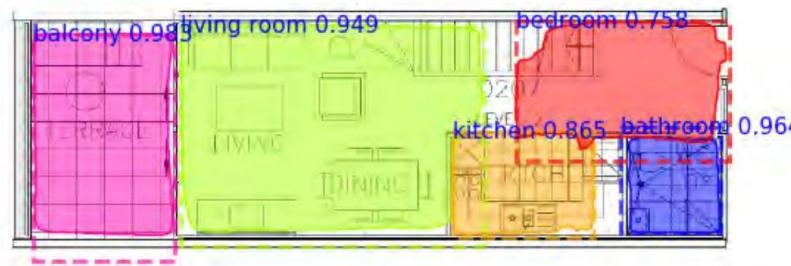
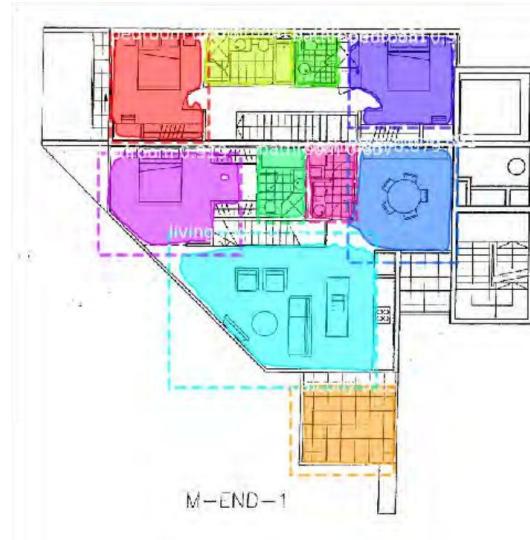


INFO HOME PROJECTS TEAM JOIN US

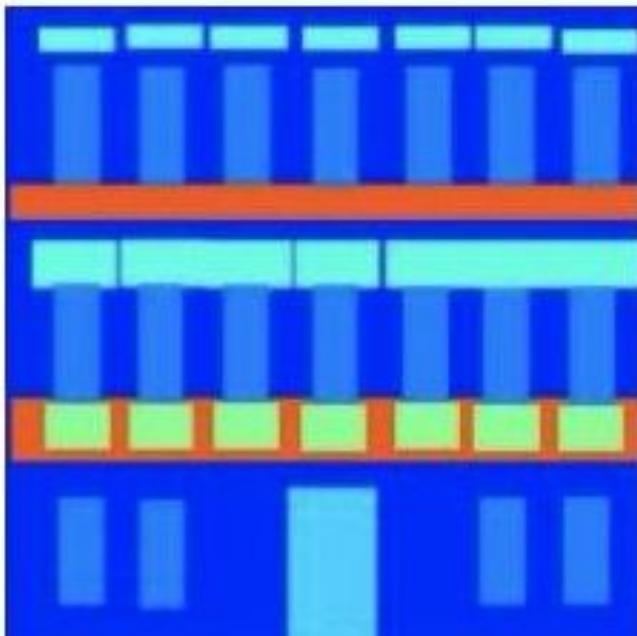


● TRANSPORT ● NATURE ● HUMAN ● MUSIC ● BUILDING

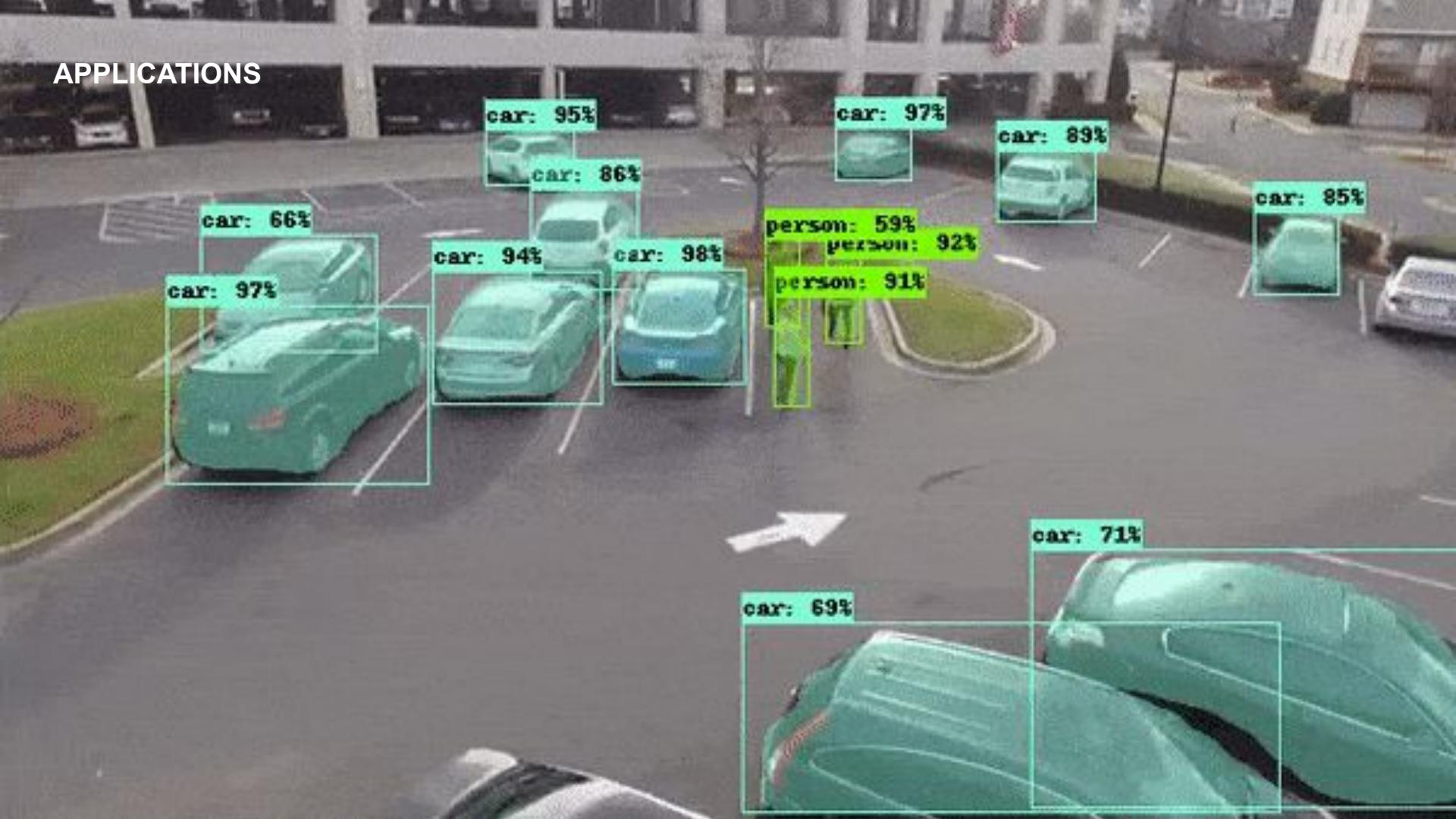
APPLICATIONS



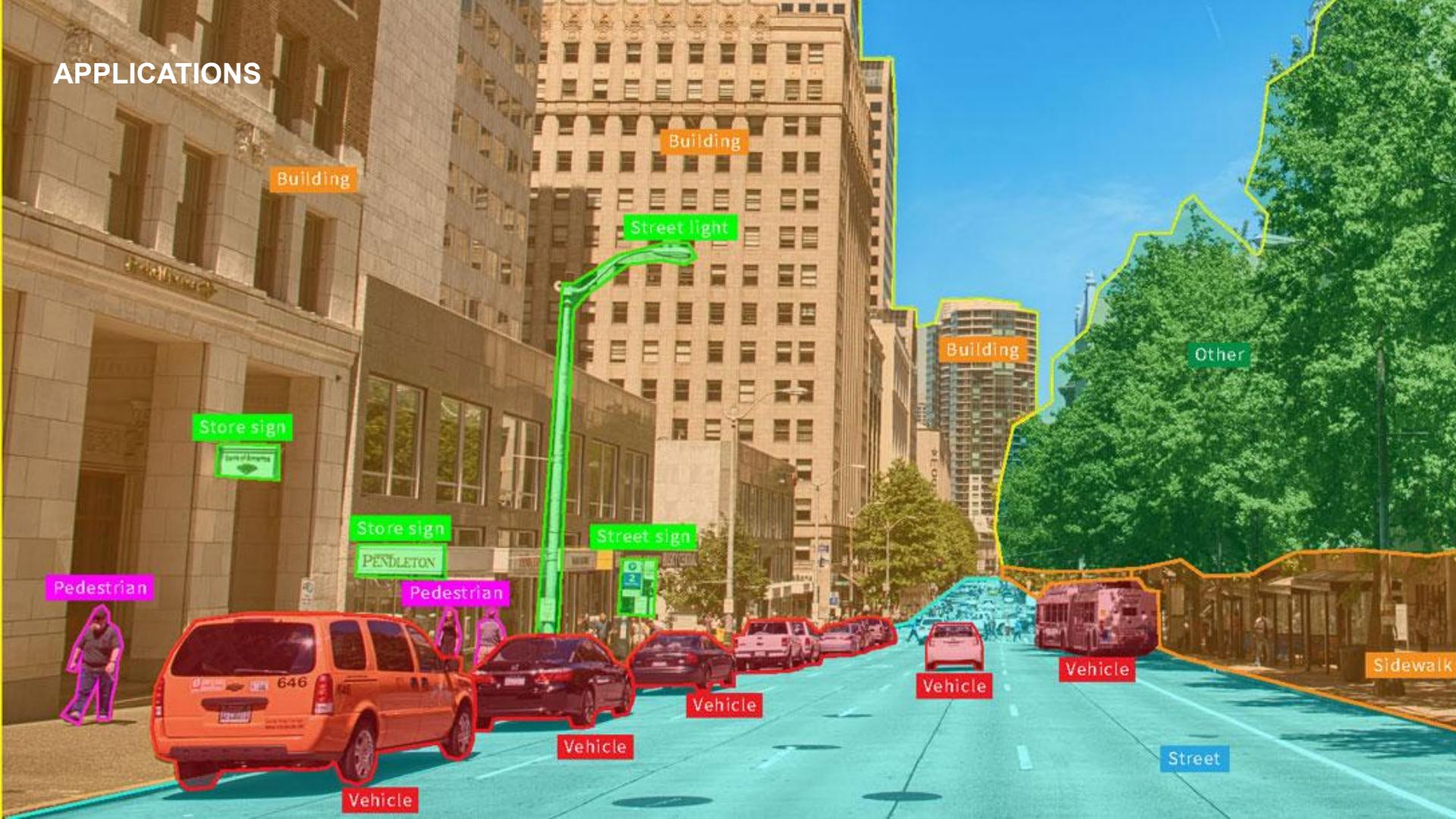
APPLICATIONS



APPLICATIONS



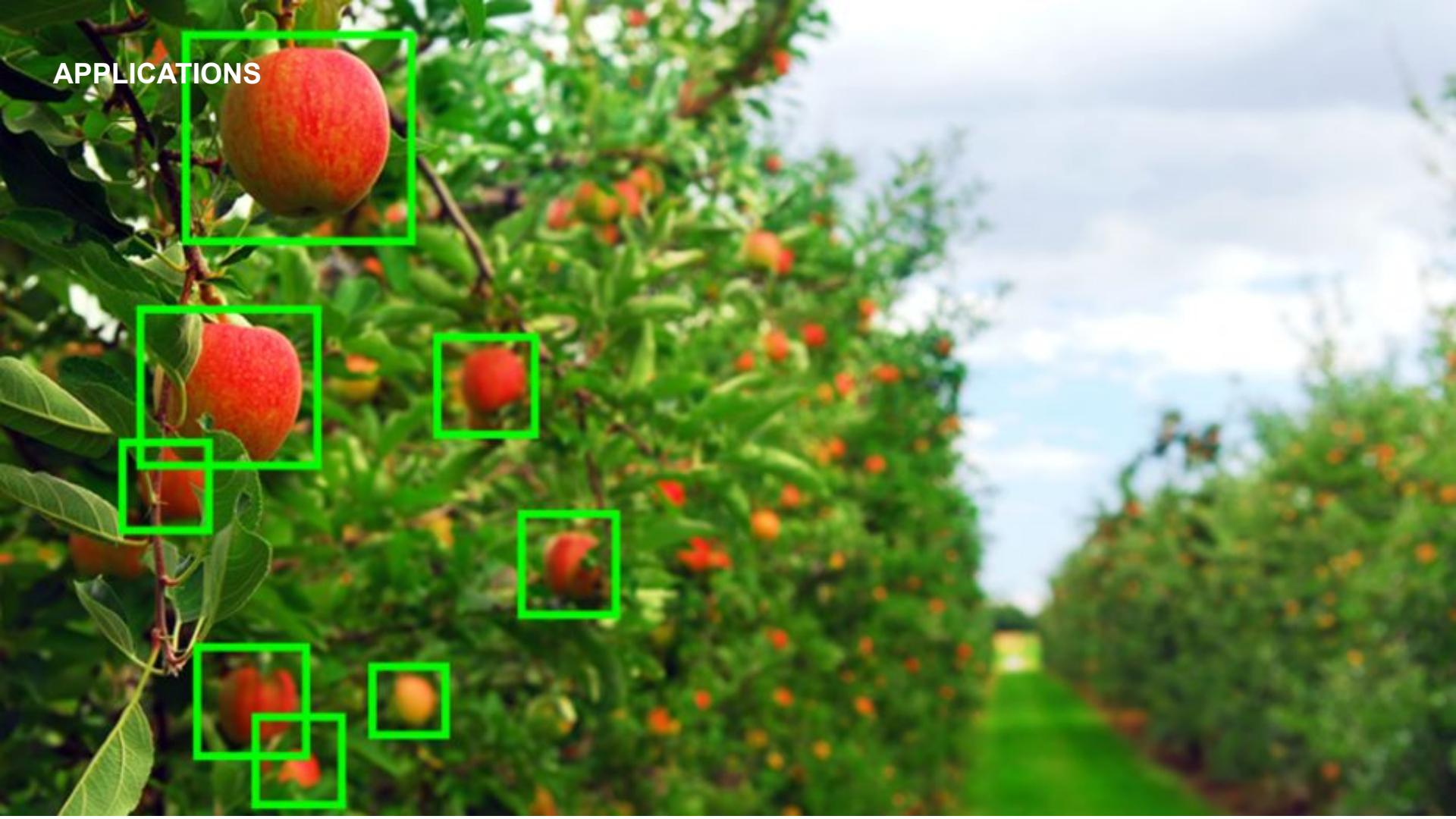
APPLICATIONS



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